September 23, 2011

Mr. James Cagle
Nu-West Industries
Conda Phosphate Operations
3010 Conda Road
Soda Springs, ID 83276

Re: ERI Borehole Drilling – Request for EPA Guidance
Administrative Order on Consent for Nu-West CPO Facility
Docket No. RCRA-10-2009-0186

Dear Mr. Cagle:

Pursuant to the *Work Plan for Additional Requirements*, dated July 11, 2011 (Work Plan), borehole drilling along the electrical resistivity imaging (ERI) and time domain induced polarization (TDIP) Transect 3 at the Nu-West Industries Conda Phosphate Operations (CPO) facility has been in progress since September 1, 2011. These boreholes are identified as A-18 through A-26; and their locations are shown on Figure 1. Drilling activities conform to requirements in EPA's letters dated August 29, 2011 and September 16, 2011.

This letter summarizes drilling conditions encountered to date and also serves as a revised proposal in response to comments in EPA's letter dated August 29. WSP seeks EPA approval of the proposed next steps, as described below, by close of business on Friday, September 23, 2011.

SUMMARY OF UPGRADIENT WELL DRILLING

To date, surface casing has been set at borehole locations A-18 through A-25, at depths ranging from 15 to 34 feet below ground surface (bgs). Depths to surface casing, as well as depths to water measured to date are provided in Table 1. Coring to 200 feet bgs has been completed at A-18, A-23, and A-25. Coring of these three boreholes has identified tops of lava flow zones that coincide with occurrence of vesicular basalt; and weathered, fractured, and unstable horizons. Reaming is complete or is in progress at A-18, A-23, and A-25 as described below.

- The surface casing at borehole A-18 was set to 16 feet bgs and then cored to 200 feet bgs. Photographs showing rock cores were provided to EPA in a letter dated September 12, 2011. On September 13, boring A-18 was reamed using air rotary methods and since then total depth of the borehole has been measured at 100 feet bgs, indicating collapse of fractured and weathered basalt horizons into the borehole. In order to conduct geophysical logging, A-18 will have to be reamed once again using advance casing drilling methods, followed by installation of a 4-inch temporary casing.

WSP Environment & Energy
4600 S. Ulster Street, Suite 930
Denver, CO 80237
Tel: (303) 850-9200
Fax: (303) 850-9214
www.wspenvironmental.com

WSP Group plc
Offices worldwide

    - Presumed flow tops – a review of rock cores for borehole A-18 shows fractured and weathered horizons at 15.8 to 17.5; 29 to 32; 67 to 72; 87 to 98; 113 to 119; 128 to 132; 171 to 175; 180 to 186; and 190 to 192 feet bgs.
- The surface casing at borehole A-23 was set to 24 feet bgs and then cored to 200 feet bgs. Photographs showing rock cores from A-23 are provided in Attachment A. Following coring, the total depth of the borehole was measured as 74 feet bgs, coinciding with a zone of highly weathered and fractured vesicular basalt from 73 to 85 feet bgs. On September 23, reaming of the borehole using air rotary methods became prohibitive at 73 to 85 feet bgs due to collapse of weathered and fractured basalt into the borehole; and thus was suspended so that drilling equipment would not become stuck. To allow for continued reaming of A-23, air rotary drilling was replaced with advance casing drilling methods. Once the borehole has been reamed to 200 feet bgs, a 4-inch temporary casing will be installed to allow for geophysical logging.
    - Presumed flow tops – a review of rock cores for borehole A-23 shows fractured and weathered horizons at 22 to 25; 57 to 62; 75 to 93; 136 to 144; 169 to 176; and 186 to 200 feet bgs.
- The surface casing at borehole A-25 was set to 15 feet bgs and then cored to 200 feet bgs. Photographs showing rock cores from A-25 are provided in Attachment A. Immediately following coring, the total depth of the borehole was measured at 160 feet bgs, indicating borehole collapse. Reaming at A-25 using air rotary began on September 22. Between 35 to 45 feet bgs, reaming of the borehole using air rotary methods became prohibitive due to collapse of weathered and fractured basalt into the borehole and thus was suspended so that drilling equipment would not become stuck. To allow for continued reaming of A-25, air rotary drilling was replaced with advance casing drilling methods. Once the borehole has been reamed to 200 feet bgs, a 4-inch temporary casing will be installed to allow for geophysical logging.
    - Presumed flow tops – a review of rock cores for borehole A-25 shows fractured and weathered horizons at 12 to 14; 17 to 21; 28 to 32; 41 to 61; 72 to 81; 99 to 110; 118 to 120; 165 to 168; 173 to 177; and 197 to 199 feet bgs.

PROPOSED NEXT STEPS

As described above, fractured and weathered basalt has been encountered along the entire depth of the boreholes A-18, A-23, and A-25 and the boreholes have not remained open following coring and reaming. Borings A-18, A-23, and A-25 are located at the southernmost, central, and northernmost portions, along Transect 3. Overall, the geology observed in these three boreholes is expected to be representative of subsurface conditions and geology along the entire length of Transect 3.

The Work Plan called for geophysical logging within an open borehole, but based on drilling observations to date, we anticipate this is not be possible because the boreholes are not stable and will not remain open. Based on this WSP seeks EPA approval to complete well installation at A-18 through A-26 as follows:

1. Ream borehole from depth of surface casing to 200 feet bgs using advance casing tooling to stabilize the fractured and weathered basalt horizons. During reaming, WSP will observe drilling conditions, including rock cutting lithology, rate of advancement, depth of first strike of groundwater and groundwater yield.

2. Install temporary, 4-inch inside diameter (ID) slotted polyvinyl chloride (PVC) screen from top of the identified water table to 200-feet bgs; and solid PVC riser casing from the identified water table to ground surface.
3. Conduct geophysical logging through the temporary 4-inch PVC casing and well screen. The geophysical logging methods that can be conducted through the 4-inch PVC casing include:
    a. Natural gamma radiation
    b. Electromagnetic induction
    c. Gamma-gamma density
    d. Neutron porosity
    e. Fluid conductivity and temperature
    f. Flow meter.
4. Determine proposed screen interval based on drilling observations and geophysical logging results.

PROPSED SCHEDULE

WSP has prepared a schedule showing the time frame to complete drilling, geophysical logging, and well installation at A-18 through A-26 within the 2011 field season. This schedule is provided as Figure 2. The seismic survey work is scheduled to be conducted from October 13 to 22. Therefore, drilling along Transect 3 will cease on October 13 so that the seismic work can begin. Our ability to meet the schedule as shown on Figure 2 is dependent upon the rate of reaming using the advance casing techniques. We currently anticipate reaming from surface casing to 200 feet bgs to take approximately 2 days at each Transect 3 borehole. In the event that reaming using advance casing takes greater than 2 days, such that reaming of A-26 will not be completed by October 13, WSP proposes to postpone drilling A-26 to the 2012 field season.

SUMMARY

In summary, based on drilling conditions observed to date, WSP seeks EPA approval of the following proposed course of action:

- Ream boreholes to 200 feet bgs using advance casing techniques, install 4-inch temporary riser casing and well screen to allow for a geophysical logging, and determine permanent well screen interval based on drilling observations and geophysical logging results.
- Postpone drilling of borehole A-26 to 2012 if this location cannot be reamed by October 13.

We respectfully seek EPA's feedback by close of business, Friday, September 23. If you have any questions, please do not hesitate to contact me.

Sincerely,

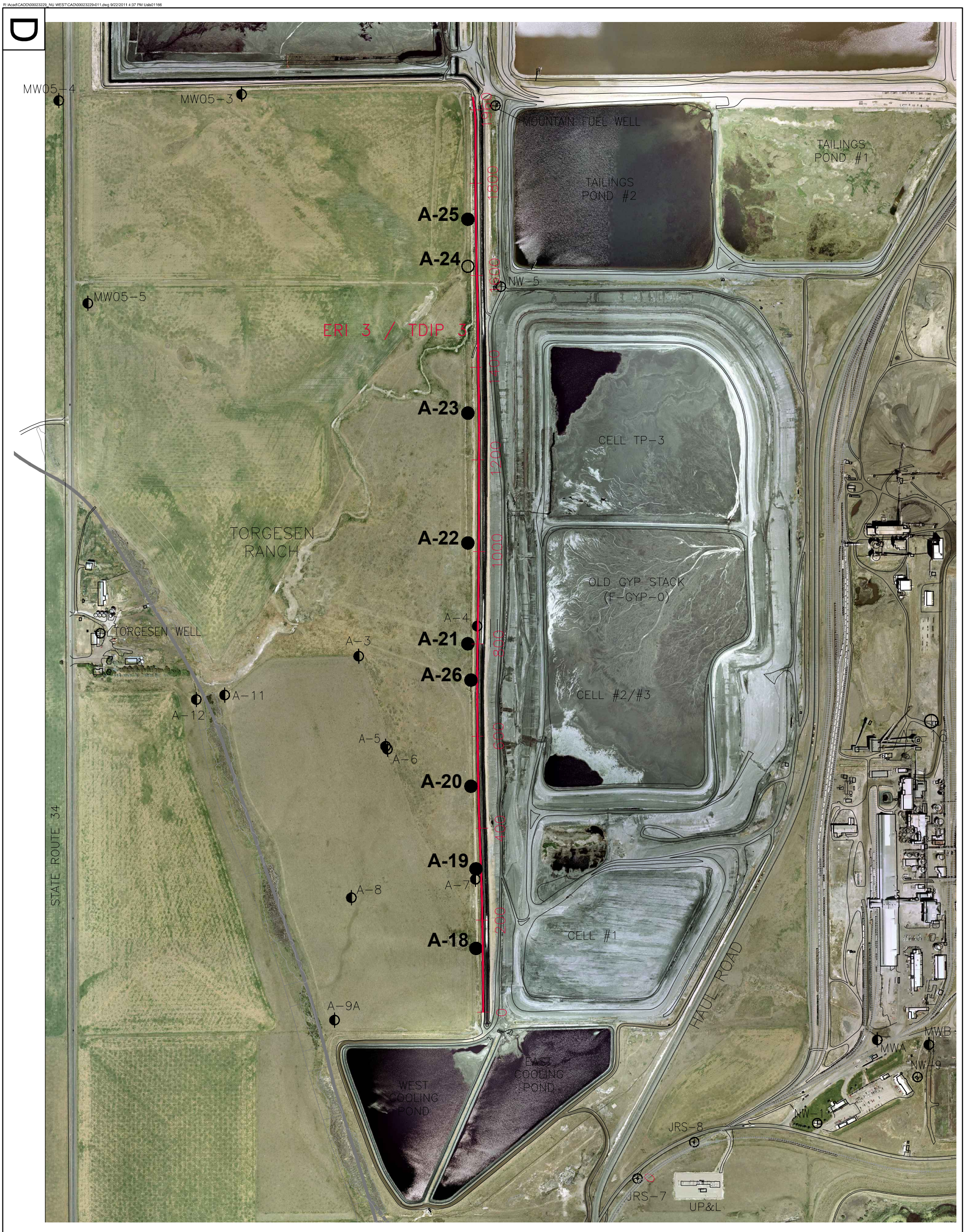
Amy Hui
Project Manager

cc: P. Scott Burton, Hunton & Williams

Attachments

R:\Acad\CADD\00023229_NU WEST\CAD\00023229-011.dwg 9/22/2011 4:37 PM Usls01166

D



LEGEND

- COVERED FAULT
- TOPOGRAPHICAL DEPRESSION
- FAULT (WITH ROCK OUTCROP)
- ERI 3 / TDIP 3 TRANSECT
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- DOMESTIC AND PRODUCTION WELL (APPROXIMATE LOCATION)
- EPA APPROVED BORING LOCATION

0 400 800 1200
SCALE IN FEET

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A PROFESSIONAL. DO NOT ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF WSP ENVIRONMENT & ENERGY, LLC.

REFERENCES: 1. MAP I-557 GEOLOGIC MAP OF THE SODA SPRINGS QUADRANGLE, SOUTHEASTERN IDAHO. USGS, 1969.

Drawing Number 00023229-011

Figure 1

WSP Environment & Energy, LLC
4600 South Ulster Street, Suite 930
Denver, Colorado 80237
(303) 850-9200
www.wspenvironmental.com/usa

SURFACE GEOPHYSICAL SURVEY TRANSECT 3 (ERI/TDIP) WITH PROPOSED CONFIRMATION BORING LOCATIONS

NU-WEST CPO FACILITY
SODA SPRINGS, IDAHO
PREPARED FOR
HUNTON & WILLIAMS

DRAWN BY	LS	8/16/2011
CHECKED		
APPROVED		

SEAL

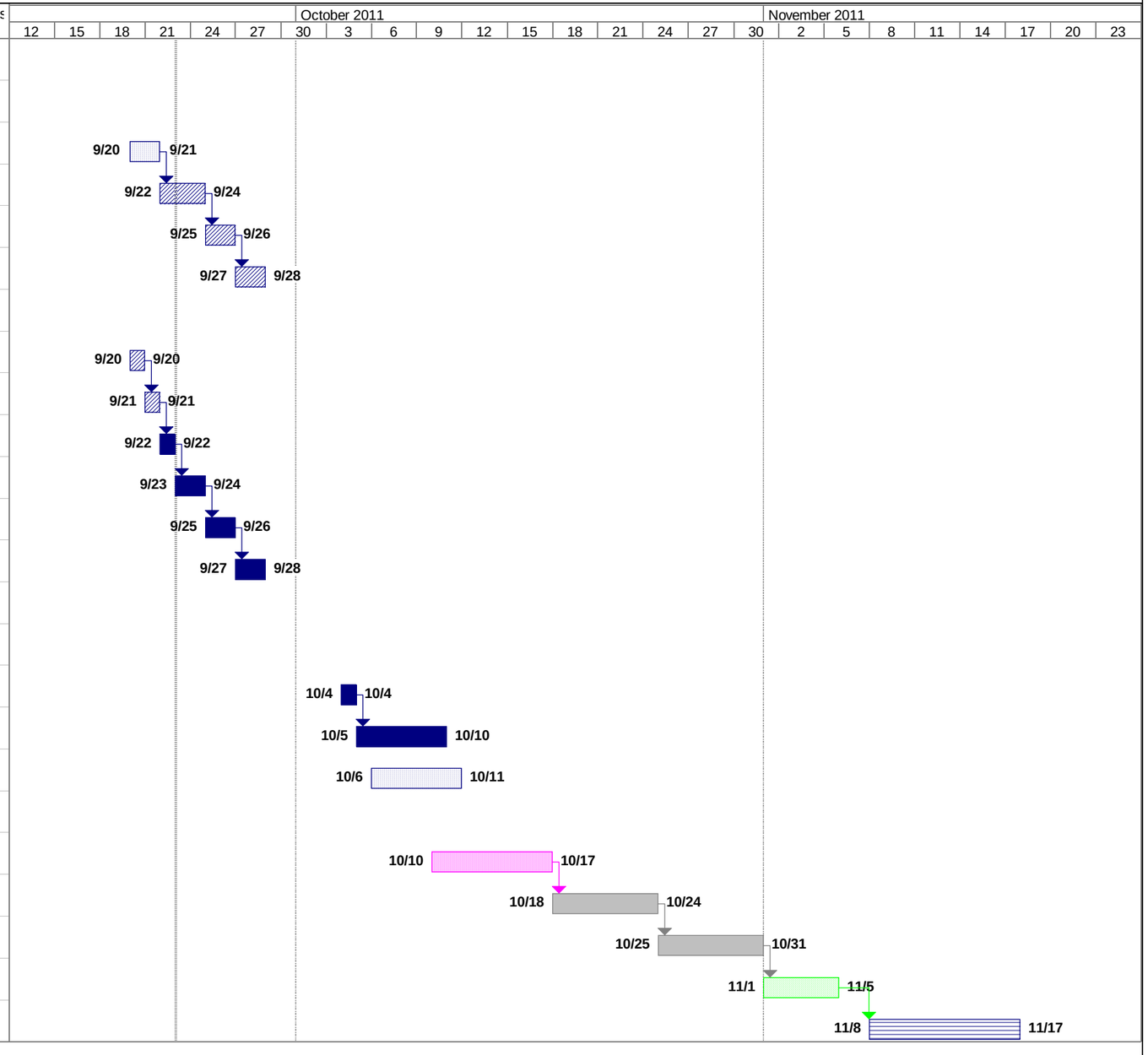
DATE

REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

Figure 2 - Schedule for Additional Work Requirements - Monitoring Well Installation in Downgradient Locations
(All durations are shown in calendar days)

ID	Task Name	Duration	Start	Finish	Predecessors
36	**Drilling Shift 2 (Adam Near and Mike Gelles)**	**9 days**	**Tue 9/20/11**	**Wed 9/28/11**	
37	**Rig 1**	**9 days**	**Tue 9/20/11**	**Wed 9/28/11**	
38	Core A-25	2 days	Tue 9/20/11	Wed 9/21/11	
39	Ream A-25 (AR)	3 days	Thu 9/22/11	Sat 9/24/11	38
40	Ream A-25 (Symetrix)	2 days	Sun 9/25/11	Mon 9/26/11	39
41	Ream A-24 (Symetrix)	2 days	Tue 9/27/11	Wed 9/28/11	40
42	**Rig 2**	**9 days**	**Tue 9/20/11**	**Wed 9/28/11**	
43	Set surface casing at A-22	1 day	Tue 9/20/11	Tue 9/20/11	
44	Set surface casing at A-20; Reamed A-23 (AR)	1 day	Wed 9/21/11	Wed 9/21/11	43
45	Finish reaming A-23 (Symetrix)	1 day	Thu 9/22/11	Thu 9/22/11	44
46	Ream A-22 (Symetrix)	2 days	Fri 9/23/11	Sat 9/24/11	45
47	Ream A-21 (Symetrix)	2 days	Sun 9/25/11	Mon 9/26/11	46
48	Re-ream A-18 (Symetrix)	2 days	Tue 9/27/11	Wed 9/28/11	47
49	**Drilling Shift 3**	**7 days**	**Tue 10/4/11**	**Mon 10/10/11**	**47**
50	**Rig 1**	**7 days**	**Tue 10/4/11**	**Mon 10/10/11**	
51	Set A-26 Surface Casing	1 day	Tue 10/4/11	Tue 10/4/11	
52	Ream A-19, A-20, and A-26	6 days	Wed 10/5/11	Mon 10/10/11	51
53	Borehole Development	6 days	Thu 10/6/11	Tue 10/11/11	
54	**Borehole geophysical testing**	**27 days**	**Mon 10/10/11**	**Sat 11/5/11**	
55	Downhole Geophysical Logging and Flowmeter Testing	8 days	Mon 10/10/11	Mon 10/17/11	
56	Provide preliminary field results to EPA	7 days	Tue 10/18/11	Mon 10/24/11	55
57	Provide final logging results and recommendations for well screen interval to	7 days	Tue 10/25/11	Mon 10/31/11	56
58	EPA review comment and approval	5 days	Tue 11/1/11	Sat 11/5/11	57
59	Well installation and development	10 days	Tue 11/8/11	Thu 11/17/11	58



Project: DRAFT Schedule 2011-05-26
Date: Fri 9/23/11

Task Milestone

DRAFT - TABLE 1
Summary of Boreholes Details along Transect 3
Conda Phosphate Operations, Soda Springs, Idaho

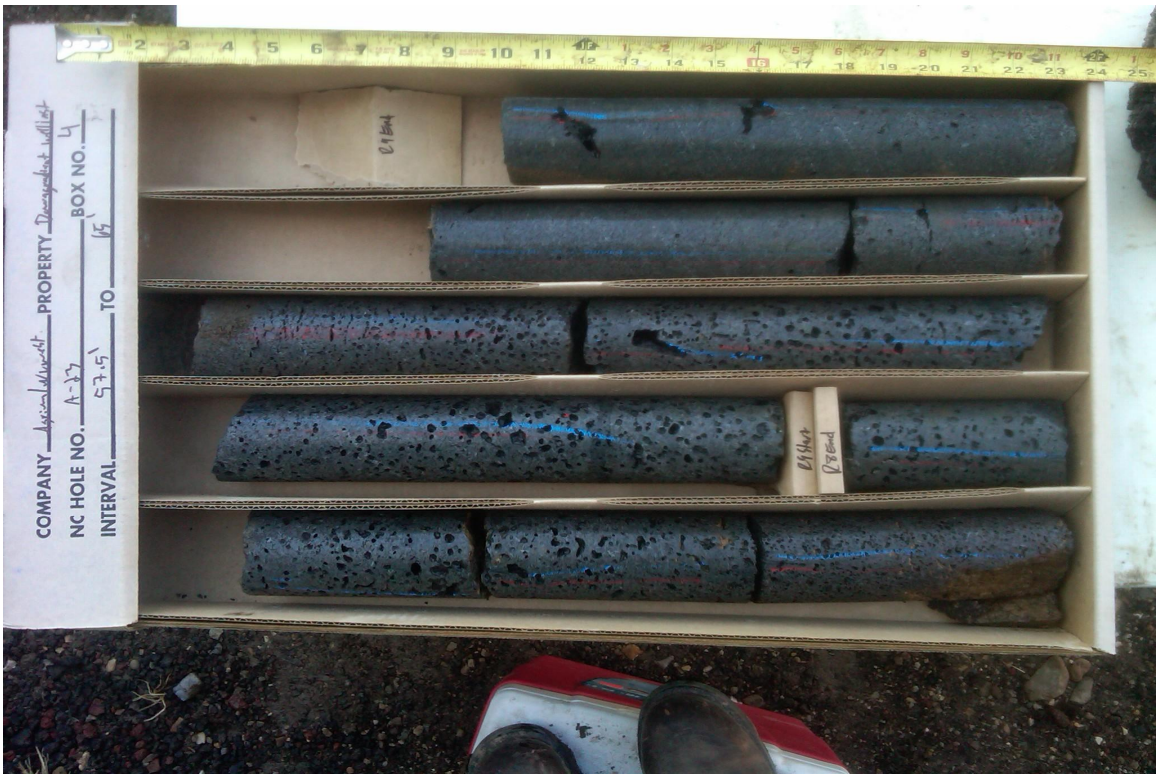
Borehole	Distance Along Transect No. 3 (m)	Surface Casing Depth (ft bgs)	Potentiometric Surface (ft bgs) (a)	First Strike of Water (ft bgs)
A-18	140	16	81	100
A-19	310	20	72	Not discernible (c)
A-20	490	34	No data (d)	No data (d)
A-21	800	21	No data (d)	No data (d)
A-22	1,020	26	No data (d)	No data (d)
A-23	1,300	24	18	Not discernible (c)
A-24	1,620	15	No data (d)	No data (d)
A-25	1,720	15	23	80
A-26	720	Not yet drilled	No data (d)	No data (d)

a/ Depth to water was measured on September 22, 2011.
b/ First strike of water was based on drilling observations.
c/ A-19 has been cored to 95 feet bgs, and during coring, first strike of water was not discernible.
d/ At these identified locations, surface casing has been set, but no additional drilling has been completed.

Photograph 1: A-23 Box 1 – 22’ to 37.5’

Photograph 2: A-23 Box 2 – 37.5’ to 48’

Photograph 3: A-23 Box 3 – 48’ to 57.5’



Photograph 4: A-23 Box 4 57.5’ to 65’

Photograph 5: A-23 Box 5 – 65’ to 73’

Photograph 6: A-23 Box 6 – 73’ to 87.2’

Photograph 7: A-23 Box 7 – 87.2’ to 96.8’

Photograph 8: A-23 Box 8 – 96.8’ to 105’

Photograph 9: A-23 Box 9 105' to 113.1'

Photograph 10: A-23 Box 10 – 113.7' to 122'

Photograph 11: A-23 Box 11 – 122’ to 131.6’

Photograph 12: A-23 Box 12 – 131.6’ to 145’

Photograph 13: A-23 Box 13 145' to 153.1'

Photograph 14: A-23 Box 14 – 153.1' to 160.6'

Photograph 15: A-23 Box 15 – 160.6’ to 170’

Photograph 16: A-23 Box 16 – 170’ to 179’

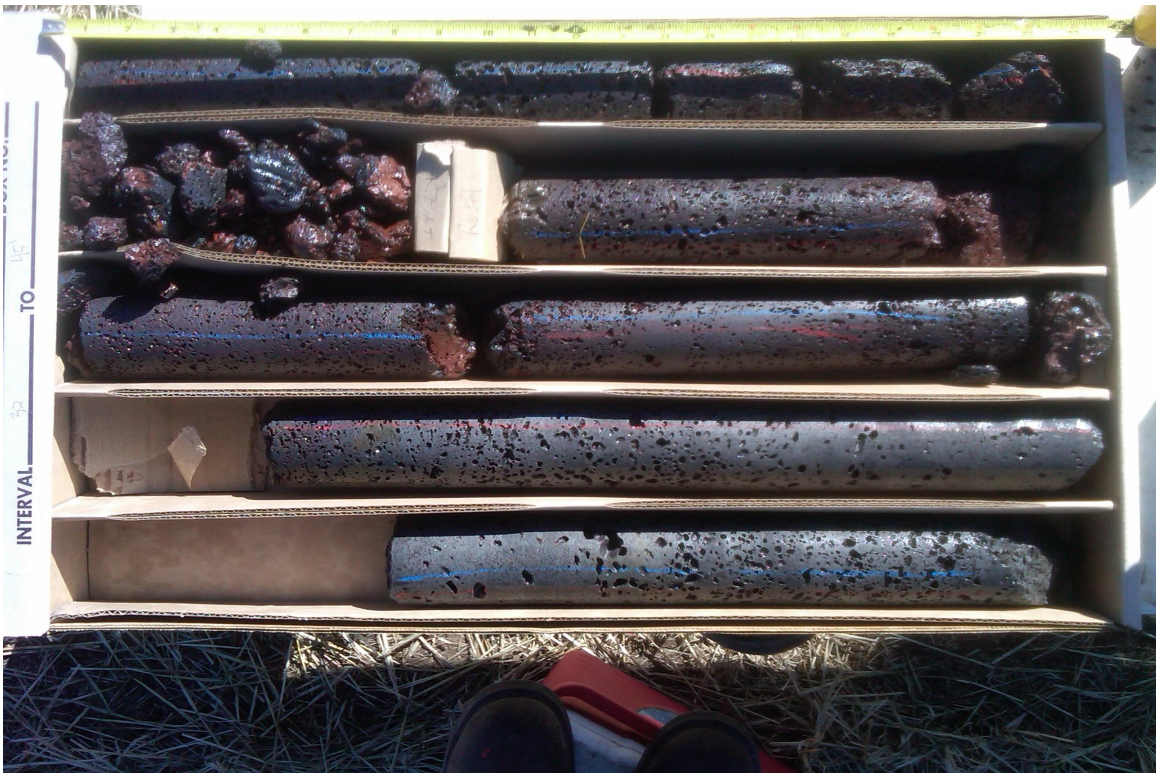
Photograph 17: A-23 Box 17 – 179’ to 190’

Photograph 18: A-23 Box 18 – 190’ to 196.6’

Photograph 19: A-23 Box 19 – 196.6’ to 200’

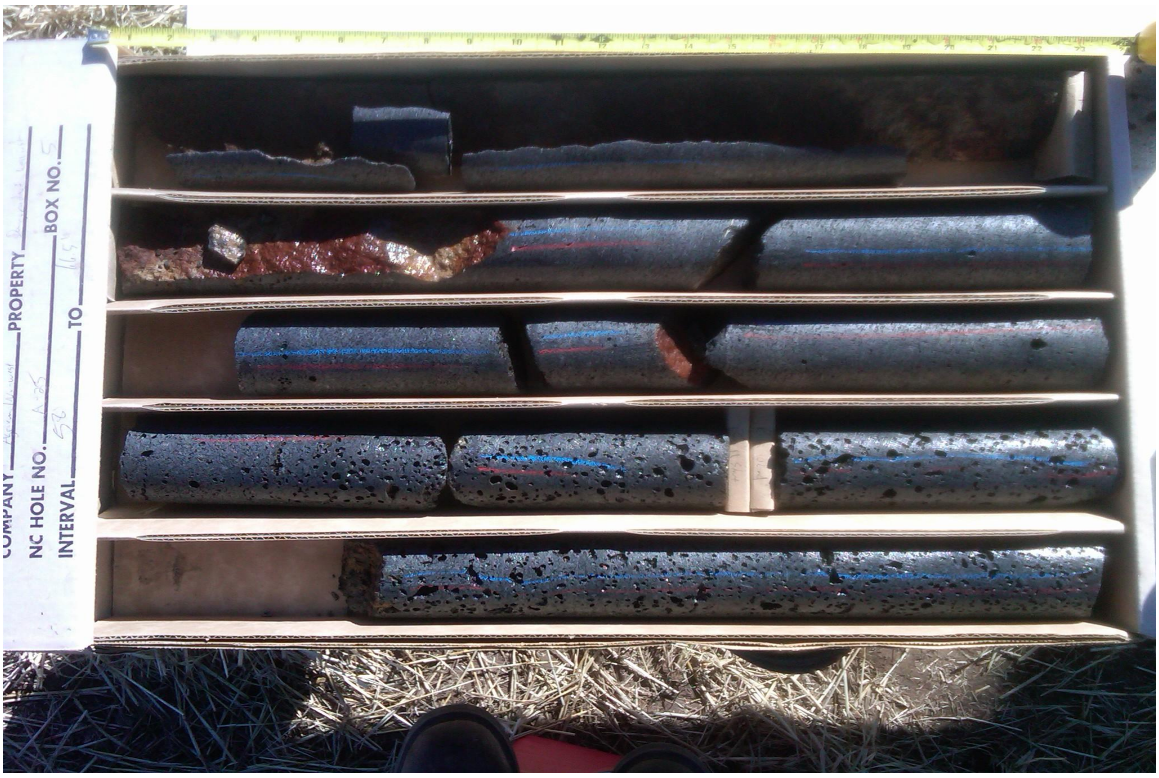
Photograph 1: A-25-Box 1-12' to 22'

Photograph 2: A-25-Box 2-22' to 32'



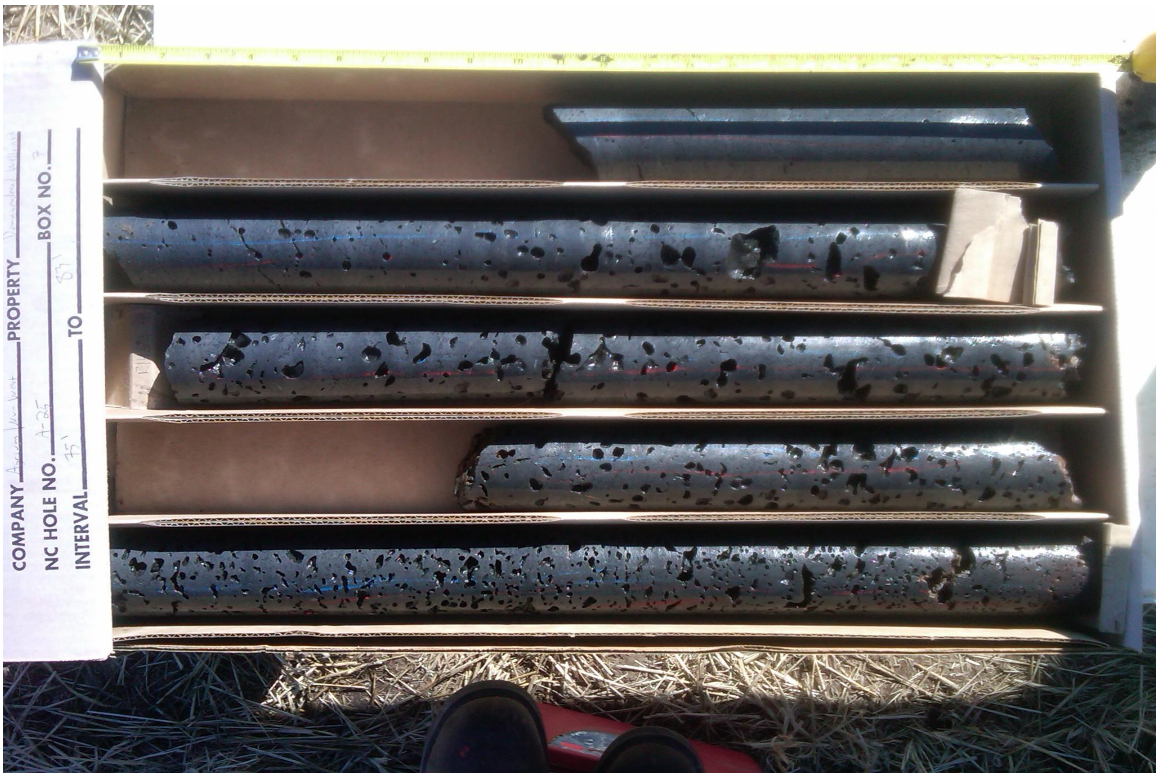
Photograph 3: A-25-Box 3-32' to 45'

Photograph 4: A-25-Box 4-45' to 58'



Photograph 5: A-25-Box 5-58' to 66.5'

Photograph 6: A-25-Box 6-66.5' to 75'



Photograph 7: A-25-Box 7-75' to 83'

Photograph 8: A-25-Box 8-83' to 91.1'

Photograph 9: A-25-Box 9-91.1' to 100'

Photograph 10: A-25-Box 10-100' to 110'

Photograph 11: A-25-Box 11-110' to 120'

Photograph 12: A-25-Box 12-120' to 129.5'

Photograph 13: A-25-Box 13-129.5' to 137.2'

Photograph 14: A-25-Box 14-137.2' to 157'

Photograph 15: A-25-Box 15-157' to 165'

Photograph 16: A-25-Box 16-165' to 174'

Photograph 17: A-25-Box 17-174' to 184'

Photograph 18: A-25-Box 18-184' to 193.5'

Photograph 19: A-25-Box 19-193.5' to 200'